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ABSTRACT

The 10-volume "Health Facts" series is intended to supplement health education curricula and provide a handy reference for individuals who would like additional background information on particular health topics. The emphasis is placed on topics and examples relevant to youth of middle and high school age. The five sections in this book provide teachers with basic information about: sexually transmitted disease (STD), also called venereal disease or VD; the history of the STD problem; many of the diseases that are known to be spread through sexual activity, including Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS); bacterial, fungal, and viral STD; and educational, behavioral, and societal control measures that can reduce the spread of sexually transmitted disease among America's youth. An easy to read reference format offers clear, concise data intended to familiarize educators with the most important facts about the issues and concerns. A glossary, a list of resources, and 18 references complete the volume. (LL)

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STD Prevention

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HEALTH FACTS

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Lucas Stang

and

Kathleen R. Miner, PhD, MPH, CHES

ETR ASSOCIATES
Santa Cruz, California
1994

ETR Associates (Education, Training and Research) is a nonprofit organization committed to fostering the health, well-being and cultural diversity of individuals, families, schools and communities. The publishing program of ETR Associates provides books and materials that empower young people and adults with the skills to make positive health choices. We invite health professionals to learn more about our high-quality publishing, training and research programs by contacting us at P.O. Box 1830, Santa Cruz, CA 95061-1830, 1-800-321-4407.

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Contents

STD Prevention

Editor's Preface v
Introduction ix

Sex and Disease 1
An Age-Old Problem 2
Risk Factors 3
STD and Women 5
1-Minute Facts 8

Bacterial STD 9
Chlamydia 10
Gonorrhea 13
Non-Gonococcal Urethritis (NGU) 15
Syphilis 16
Prevention of Bacterial STD 18
1-Minute Facts 19

Viral STD 21
Hepatitis 23
Herpes Simplex 25
HIV/AIDS 26
Human Papilloma Virus (Genital Warts) 28
Sexually Transmitted Viruses and Cancer 29
Prevention of Viral STD 30
1-Minute Facts 31

Other STDs 33
Candidiasis 34
Trichomoniasis 35
Prevention of Other STDs 36
1-Minute Facts 36

Prevention and Control 37
Choices About Sex 38
Personal Protective Measures 42
Fear, Denial and Rationalization 44
Disease Control Measures 46
National Disease Control Efforts 47
1-Minute Facts 51

Glossary 53
Resources 57
References 59
Index 61

Editor's Preface

Everyone agrees that children and youth need to learn skills for establishing good health habits. Most people also agree that the earlier health education starts, the better its success.

The books in the *Health Facts* series were written to provide the background information educators need as they teach young people about health. The information is provided in a way that makes it easy for educators to familiarize themselves quickly with the most important facts about a health topic.

Rather than providing indepth information in each content area, the books offer guidance to the balance of emphasis. They help educators approach health topics with confidence and focus health content as they teach.

Titles in the Series

Each volume in the series contains information about a different content area. The following ten books comprise the series:

- *Disease Prevention*
- *Drug Use Prevention*
- *Environmental and Community Health*
- *Fitness*
- *HIV Prevention*
- *Injury and Violence Prevention*
- *Mental and Emotional Health*
- *Nutrition*
- *Sexuality*
- *STD Prevention*

Contributors

These books were written by the following talented and knowledgeable professionals in collaboration with ETR Associates' staff.

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In addition, we would like to thank Mary Nelson, publisher of ETR Associates, for the concept idea, Kathleen Middleton, editor-in-chief of ETR Associates, for her review and conceptualization, and Jill Schettler for her help in editing.

Netha Thacker
Project Editor

Introduction

Until the 1980s, only five venereal diseases were regularly monitored. During the last several years, however, the spectrum of sexually transmitted diseases has increased dramatically in both complexity and scope; more than 50 organisms and syndromes are now recognized.

—U.S. Public Health Service

The study of early medicine and the study of sexually transmitted disease are intimately linked. Some of the earliest medical writings of Egyptian physicians, dating from about 1900 B.C. refer to "copulation sickness" and appear to describe diseases similar to gonorrhea and genital ulcers. Although the precise origin of syphilis is unknown, an epidemic spread of syphilis occurred in Europe 18 months after Columbus returned from his first voyage to the Americas.

Despite its outward emphasis on propriety, the Victorian era of the 1800s was the time of an enormous spread of gonorrhea and syphilis within British society. People of all

classes were having sexual liaisons, but these were not talked about. When people acquired a sexually transmitted disease, they told no one. After all, there was no treatment.

Out of concern for its national defense, the British War Office began issuing condoms to its troops in the 1880s. The U.S. War Department rapidly followed suit and began issuing condoms to sailors on shore leave. This practice was expanded to foot soldiers during World War I and continues today.

As a further protection for the general public, during the 1940s the federal government assisted states in establishing STD clinics and systems for disease reporting and sexual partner tracing. As a result of these measures and the availability of antibiotics, the epidemic of sexually transmitted disease began to subside.

However, in the 1980s and 1990s, both syphilis and gonorrhea cases increased dramatically. Incidence of these diseases is now at the highest level since the early 1950s. Much of this resurgence has occurred in the adolescent and young adult population. It has also occurred at a time when the number of diseases known to be transmitted sexually has risen from five to more than fifty.

According to the U.S. Public Health Service, by age 21, nearly 20% of all people have had a sexually transmitted disease that required treatment. When these figures are adjusted by compensating for the number of young people who are not sexually active, the incidence of STD in sexually active youth increases to almost 25%.

These statistics are staggering. Not only are young people being exposed to an array of diseases far more formidable than the STDs of their parents' generation, but they are vulnerable to conditions that lead to tragic side-effects. Many STDs can result in life-long problems, including sterility, ectopic pregnancy, cancer, birth defects and death. Some of the more virulent diseases, such as HIV/AIDS and genital herpes, have no cure, while others, such as gonorrhea, are becoming resistant to antibiotics.

Once again, society is faced with the need to protect its sexually active citizens, including its youth, from these dreadful diseases. In the absence of new treatments, the only *prevention* measure available is the promotion of abstinence or monogamy, and the only *protection* measure available is the use of condoms.

STD Prevention: Health Facts provides educators with basic information about sexually transmitted disease. The book presents a brief history of the STD problem and describes many of the diseases that are known to be spread through sexual activity. It also describes educational, behavioral and societal control measures that can reduce the spread of sexually transmitted disease among America's youth.

The Role of Education

The research conducted during the past thirty years has offered greater insight into the causes of chronic disease, injury and violence. This research indicates that these conditions are primarily caused by human behavior. What people do or do not do places them at risk of acquiring chronic diseases or experiencing serious injuries.

The behavioral components associated with the modern pattern of disease and injury create the potential for preventing most of these health problems by changing behavior. Comprehensive health promotion and education programs provide the foundation for modern disease prevention.

Ideally, the health promotion and education process begins early. Early education provides the opportunity to reach children and youth before they begin to adopt the behaviors associated with chronic disease, sexually transmitted disease, drug use, injury and mental illness. Through a systematic review of health promotion and disease prevention, educators can help children and youth enhance their health while helping them avoid illness and injury.

The *Health Facts* Series

STD Prevention: Health Facts is part of a ten-volume series designed to provide clear, concise content and to be complementary to curricula published by ETR Associates and other health education curricula. Other volumes in this series that relate to STD prevention include *Disease Prevention, HIV Prevention* and *Sexuality.*

Classroom teachers, counselors, school nurses and others are often called upon to become instant health educators. They may be asked to answer questions, present information and lead discussions on health topics in which they feel unprepared.

The *Health Facts* series is designed to be a handy reference for individuals who would like additional background information on particular health topics. The emphasis is on topics and examples that are relevant to youth of middle and high school age. By design, the presentation of each of these topics is brief. References and resource listings direct the reader to additional relevant information. All of the volumes in this series offer a user-friendly format that is easy to read and factual.

The volumes discuss health and disease in straightforward language. Educators may want to review each volume for its appropriateness for their school and community before assigning the books for student use.

This book and the rest of the series can serve as useful additions to classroom, school or library collections. Health care professionals may choose individual volumes or the entire series as a convenient reference for patient education programs or as reading material in office waiting rooms. Individuals may find the series useful as a home reference as well.

Sex and Disease

Myth: STD is a new problem.

Fact: With the exception of HIV/AIDS, all of the fifty or so organisms and syndromes known to be sexually transmitted are not new. Most STDs or their symptoms have been recognized for decades, if not for centuries.

An STD is a *sexually transmitted disease.* STD is also called venereal disease or VD. STD is spread by sexual contact and sexual intercourse—oral, anal or vaginal. Anyone who has sexual intercourse risks getting an STD.

The following are the most common STDs:

- chlamydia
- gonorrhea
- genital warts
- herpes
- syphilis
- hepatitis B
- urinary and vaginal infections
- HIV/AIDS

The incidence of most infectious diseases has decreased in the past century; however, the rate of STD has risen. In the United States, approximately 12 million cases of STD occur every year. Experts estimate that approximately one in eight teenagers gets an STD each year.

An Age-Old Problem

Some STDs and their effects have been known for centuries.

- **Gonorrhea:** Gonorrhea is the oldest and one of the most common forms of STD. It is mentioned in the writings of Plato and Aristotle. Moses speaks about it in the Old Testament. Ancient Chinese and Egyptian manuscripts refer to a contagious urethral discharge, which is probably gonorrhea.

  Hippocrates called it "venereal disease," as he believed the symptoms resulted from "excessive indulgence in the pleasures of Venus," the goddess of love. A Greek physician named Galen coined the name *gonorrhea*, a combination of the words for seed and flow, in the second century A.D. Albert Neisser identified the bacterium that causes the disease in 1879. It was named *Neisseria gonorrhoeae* after him.

- **Syphilis:** The most commonly accepted theory about the origins of this STD is the "Columbian theory," which suggests that syphilis was brought to Europe by Columbus and his crew after their voyage to the West Indies in 1493. Pre-Columbian Indian bones do indicate syphilis existed in the Americas at the time of Columbus's visit. By the turn of the century, "the great pox," as the disease was known, had spread throughout Europe, probably transported by Spanish nationals fighting in the French army.

Risk Factors

The biggest risk factor for STD is sexual activity with an infected partner; however, anyone who is sexually active is at risk. Biological and behavioral factors can affect a person's risk of getting an STD.

Biological Factors

Biological factors that affect risk include:

- gender
- age
- lowered resistance

■ **Gender:** Although fewer women than men are infected with STD, women are twice as likely as men to get an STD from a single act of sexual intercourse with an infected partner. The anatomy of a woman's body makes it easier for disease organisms to enter and develop. Women have a 50% chance of getting gonorrhea and a 40% chance of getting chlamydia in a single act of unprotected intercourse with an infected partner. The female anatomy also makes STD more difficult to diagnose.

Teens at Higher Risk for STD

The developmental stage of adolescence has certain characteristics that can make teenagers more vulnerable to STD, including:

- a tendency to behave impulsively, without thought to long-term consequences
- feelings of conflict and embarrassment about their sexuality and a reluctance to name their sexual partners
- feelings of invulnerability, which lead to difficulty believing they can actually be infected

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- **Age:** Teenage women are at a higher risk than older women for cervical infections. Young women have fewer protective antibodies against STD bacteria and viruses. Teenage women have the United States' highest rate of gonorrhea infection.

- **Lowered resistance:** Anyone who has been infected with an STD is more likely to be *co-infected* by other organisms. People with an STD are three to five times more likely to get HIV, if exposed, than people without an active infection. People with HIV are more susceptible to other sexually transmitted diseases. Co-infections make treatment more difficult.

Behavioral Factors

Behavioral factors that influence risk include:

- number of sexual partners
- condom use
- sex and drugs

- **Number of sexual partners:** The risk of getting STD multiplies as a person's number of sexual partners increases. A person who is abstinent has no risk. Uninfected people who are in a long-term, mutually monogamous relationship—a relationship in which a couple has sex only with each other—are not at risk for STD.

  When people have multiple sex partners—over a specific period and over the course of a lifetime—their STD risk rises significantly. During their lifetimes, most adult Americans have more than one sex partner. The average is four.

  Direct exposure is only part of the risk. A person who has sexual intercourse with someone who has had multiple partners is indirectly exposed to all of those partners. This multiplies the person's risk of getting an STD.

- **Condom use:** Using condoms and other forms of barrier birth control reduces the risk of becoming infected with an STD. Latex condoms can reduce the transmission of all

STD. Combining latex condoms and spermicides is even more effective. Even using spermicides alone lowers the risk of getting a bacterial infection.

People at risk are those who don't use condoms at all or don't use them consistently. In studies of people with multiple sexual partners, less than 20% said they use condoms even occasionally; approximately half said they never use them.

- **Sex and drugs:** Exchanging sex for money increases direct and indirect risks of STD exposure. Drug users often trade sex for drugs, which may mean they have many sexual partners. Drugs, including alcohol, affect a person's ability to make decisions about sexual activity, condom use and STD risk. All of these behaviors affect the risk of STD.

STD and Women

Not only are women more likely than men to contract an STD, but they frequently suffer serious long-term complications. Some long-term complications result because many STD symptoms in women are mild in the early stages, so an STD may remain undetected and, therefore, untreated. Men can also suffer serious long-term consequences from STD.

Many of the most severe problems for women result from undetected chlamydial and gonorrheal infections. Possible long-term complications include:

- pelvic inflammatory disease
- ectopic pregnancy
- infertility
- cervical cancer
- HIV

STD can also affect pregnancy and newborn babies.

- **Pelvic inflammatory disease, or PID:** This is a disease in which a cervical infection spreads throughout the reproductive system. It is by far the most common complication of STD. More than 1 million cases are reported annually in the United States. PID often leads to chronic pain, infertility and ectopic pregnancies. Each year, more than 275,000 women with PID are hospitalized for treatment. Nearly half require surgery, and approximately 30,000 have hysterectomies.

More About Pelvic Inflammatory Disease

Pelvic inflammatory disease, or PID, is an extremely painful complication of untreated or mistreated primary infections. It can cause sterility, and it can be so serious that hospitalization is required.

Acute PID most frequently occurs in women under 25 years old who have multiple sexual partners. PID has been associated with IUD use, but it is most often linked to STDs such as gonorrhea and chlamydia. PID can damage the endometrium, ovaries, fallopian tubes and any adjacent organs.

Symptoms of PID include lower abdominal pain during or after menstruation, cervical tenderness and discharge, and heat radiating from the pelvic area. The endometrium becomes inflamed, which causes abdominal tenderness and swelling. In a severe infection, a woman's fever can rise to 103° F and her pulse becomes rapid. She can have abnormal uterine bleeding and frequent urination.

Penicillin, ampicillin and tetracycline are the most frequent treatment. Sexual partners must be treated at the same time to prevent reinfection.

- **Ectopic pregnancy:** In an ectopic pregnancy, a fertilized egg cannot pass into the uterus because of scarring in the fallopian tube. The egg implants in the tube instead. As the egg begins to grow, it ruptures the tube, which creates a critical medical emergency. Ectopic pregnancies are a major cause of maternal death in the United States and the leading cause of maternal death among African-American women. About half of the 88,000 ectopic pregnancies that occur each year are caused by previous STD infections. Women who have had PID are six to ten times more likely to have an ectopic pregnancy.

- **Infertility:** STDs that develop into PID leave approximately 150,000 American women unable to have children each year. One in seven women become infertile after a single episode of PID. Men can also become sterile as a result of untreated STD.

- **Cervical cancer:** Cervical cancer kills almost 5,000 American women each year. This form of cancer is strongly linked to *human papilloma virus* (HPV), the virus that causes genital warts. Studies show that a million men and women, many of them young, are infected with HPV.

- **HIV infection:** The number of women currently infected by HIV is relatively small; however, it is rising rapidly. Approximately 11% of adult HIV cases in the United States are women. This disease has become a leading cause of death among both men and women ages 25 to 44.

- **Pregnancy:** STD during pregnancy can cause miscarriages, stillbirths and premature deliveries. STD can also have a severe impact on a newborn's health.

  More than 100,000 infants are born infected with chlamydia, which can cause infant pneumonia. Gonorrhea can cause blindness in newborns, as well as meningitis and arthritis. Half of the babies born to HIV-positive mothers will be HIV-infected. Herpes transmitted to a baby during delivery can cause death or serious nerve damage.

1-Minute Facts

- Sexually transmitted disease (STD) is spread by sexual contact.
- In the United States, approximately 12 million cases of STD occur every year.
- Most STDs and their effects have been known for centuries.
- Biological and behavioral factors can influence the chance of getting an STD.
- Women are twice as likely as men to get an STD from a single act of sexual intercourse with an infected partner.
- Women frequently suffer serious long-term consequences of STD, including infertility.

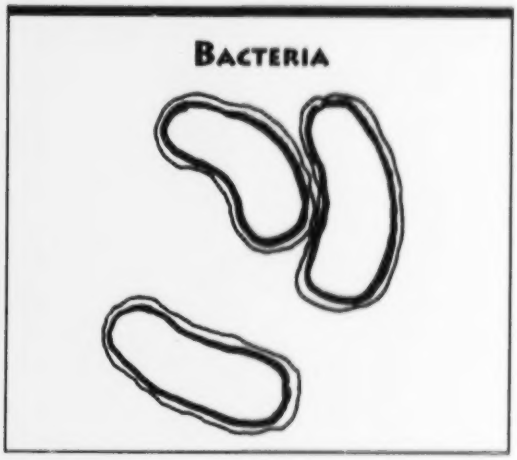
BACTERIAL STD

MYTH: Antibiotics cure most STD.

Fact: Antibiotics are important weapons against disease. However, they are effective only against STD caused by bacteria. They are not effective against those caused by viruses. Even some bacterial STD is now resistant to antibiotics.

Bacteria are single-celled organisms, a small amount of living matter surrounded by a thin cell wall. They are not plants, animals or fungi, but are classified in a separate group called *monera*. Unlike other kinds of cells, bacteria do not have an organized nucleus.

Most bacteria are colorless, with characteristic shapes like balls, rods or corkscrews. Bacteria reproduce by dividing. If the temperature and the food conditions are right, one bacterium can become a colony of more than 1 million cells in less than one day.



Bacteria are single-celled organisms.

As bacteria grow they release poisons called *toxins*. These toxins make people sick. Most bacterial STD can be treated with antibiotics. However, there are no *vaccines* to prevent STD infection, and infection does not confer immunity.

STDs caused by bacteria include:

- chlamydia
- gonorrhea
- non-gonococcal urethritis (NGU)
- syphilis

Chlamydia

Chlamydia is transmitted chiefly through vaginal and anal intercourse. It can also be transmitted through oral sex. It is the leading cause of pelvic inflammatory disease in women and the major cause of *nongonococcal urethritis* in men.

Chlamydia has now reached epidemic proportions in the United States. It is the most common sexually transmitted disease. According to one estimate, 4 million American men, women and children become infected each year.

About Chlamydia

Chlamydia is the most common bacterial STD in the United States.

- More than 1.5 million cases occur annually in men. Nearly 2.5 million cases occur yearly in women and infants.
- The cost of detecting and treating uncomplicated cases in 1990 was approximately $781 million.
- Of sexually active teen women, 10% to 29% are infected.
- Approximately 10% of sexually active male teenagers have asymptomatic infections.
- Of all women tested in family planning clinics, 9% have chlamydia.
- College health services report rates of chlamydia as high as 17% in undergraduate women.
- Of the people tested in STD clinics, 20% to 40% are infected with chlamydia.

Source: P. Donovan. 1993. *Testing Positive: Sexually Transmitted Disease and the Public Health Response.* New York: The Alan Guttmacher Institute.

Chlamydial diseases were originally thought to be viruses, but they are now considered to be more like bacteria. Most cases of *cervicitis* (infection of the *cervix*) and *urethritis* (infection of the urinary tube) in women and urethritis and *proctitis* (infection of the rectum) in men are probably caused by *Chlamydia trachomatis*.

Like viruses, *Chlamydia trachomatis* grows inside other cells, particularly those in the reproductive system. Like bacteria, it reproduces by dividing into two. Once it penetrates a cell it divides and multiplies until more than 500 new organisms have been produced. Within approximately 48 hours, the penetrated cell bursts. This releases the newly formed infectious bacteria.

Symptoms

Chlamydia has a relatively long incubation period. The first symptoms appear 7 to 28 days after intercourse.

Approximately 75% of the women infected with chlamydia have either no symptoms or only a mild vaginal discharge. Some women experience abdominal pain or pain during sexual intercourse.

By contrast, 75% of infected men are symptomatic. Penile discharge and painful urination are common. Men may also suffer pain or swelling in the testicles.

Sexual history is important in diagnosing chlamydia. A new sexual partner within the last two months indicates an increased risk of chlamydial infection.

Many cases of chlamydia are accompanied by other STDs, notably gonorrhea, genital warts or other types of vaginitis.

Untreated chlamydial infections are responsible for 30% to 50% of acute PID in women. Untreated chlamydia in men can lead to *epididymitis*, an inflammation of the sperm storage ducts in the testicles. This condition can result in sterility. Both men and women infected with chlamydia are at increased risk of getting HIV.

Infection during pregnancy can cause premature labor and delivery. The infection can be passed to the baby during delivery. Chlamydia is a major cause of infant pneumonia, which can be life-threatening and cause long-term respiratory problems. It is also a major cause of neonatal eye infections, which can result in blindness.

Treatment

Chlamydia is curable. Treatment consists of a course of antibiotics for a period of ten days. Relapses occur in approximately 20% of the cases. If a relapse occurs, treatment can last up to 28 days. Penicillin is not effective against chlamydia.

People diagnosed with chlamydia should abstain from sexual intercourse until the symptoms subside and the treatment is completed. Their sexual partners should be examined and treated if the infection is present, because sexual partners can reinfect one another.

Gonorrhea

Gonorrhea is the most commonly reported infectious disease in the United States. However, experts believe that only about 50% of all cases are treated and reported. Probably well over 2.5 million people are infected each year. People 15 to 29 years old are most often affected.

Gonorrhea is a bacterial infection of the cervix, urethra, rectum or throat acquired by vaginal, anal or oral sexual intercourse. The membranes of the eye are also susceptible to infection. This bacterium only infects humans. It cannot survive long outside the perfect living conditions provided by the mucous membranes of the human body.

Women are at greater risk from contact with an infected man than men are from contact with an infected woman. Fifty percent of the women who have unprotected intercourse with an infected partner will contract gonorrhea. Scientists believe this difference occurs because a man's penis is exposed only during intercourse, but a woman's cervix can remain in contact with infectious ejaculate for a long time after intercourse. Also, men can clean out bacteria in the urethra when they urinate after sexual intercourse. The vagina also cleans itself, but much more slowly.

Symptoms

Symptoms usually begin two to eight days after exposure to the bacterium. Most men with gonorrhea have a pus-filled yellowish discharge from the penis. They feel a burning sensation during urination and need to urinate frequently. The infection in the urethra causes inflammation, and the pus is the body's attempt to clear the bacteria. Approximately 20% of men infected with gonorrhea have no symptoms.

The symptoms of gonorrhea in women are vaginal discharge, irritation of the vulva, pain or burning during urination and abnormal menstrual bleeding; 50% to 80% of women have either very mild symptoms or no symptoms and do not know they are infected. The primary site of infection is the cervix,

which normally produces a discharge. It is difficult to distinguish mild *gonococcal* (gonorrhea-causing) discharge from this normal discharge.

Non-genital symptoms are similar in men and women. *Pharyngeal gonorrhea*, a bacterial infection of the throat, is most often acquired through oral sex. The main symptoms are a sore throat and swollen lymph nodes, although some cases are asymptomatic.

Rectal gonorrhea, most often transmitted during anal sex, causes itching and a rectal discharge. Many cases have either mild symptoms or no symptoms.

Gonorrhea can cause a range of serious complications if left untreated. In men, the bacteria can spread to the prostate, seminal vesicles and epididymis, and can cause severe pain and high fever. It can also lead to sterility.

Untreated gonorrhea in women can spread throughout the reproductive system and lead to pelvic inflammatory disease. PID causes scarring in the fallopian tubes, which can then become blocked and prevent conception.

In both men and women, gonorrhea can spread through the bloodstream to other organs, including the brain, the heart and the joints. If it spreads to the joints, it can cause arthritis.

Newborn babies can be infected as they pass through the cervix of an infected mother. The bacterium can attack the eye membranes and cause blindness. In U.S. hospitals, babies are routinely given eye drops to prevent gonococcal infection.

Treatment

Gonorrhea is curable. The most common treatment is antibiotics, principally penicillin. However, some strains of gonorrhea are resistant to penicillin, and the proportion of resistant infection is increasing. Because approximately 10% of the cases are not curable by penicillin, public health officials now recommend treatment with a combination of antibiotics. This regimen has the added advantage of treating any coexisting chlamydial infections.

Non-Gonococcal Urethritis (NGU)

Urethritis is an inflammation of the *urethra*, the tube through which urine is discharged from the bladder. In the past, a discharge from the urethra not caused by the bacteria that causes gonorrhea was called non-gonococcal urethritis, or NGU. Doctors postulated a variety of causes for NGU, including a "strain," too much alcohol or spicy food, and too much or too little sexual activity. They now know that most cases of NGU are caused by bacterial infections, principally chlamydia.

Symptoms

Symptoms usually occur 7 to 28 days after exposure. The symptoms of gonorrhea and NGU are very similar: a discharge, itching and burning during urination. Only a careful examination and testing can tell the difference between gonorrhea and NGU.

Treatment

Since most cases of NGU are caused by bacteria, antibiotics are usually an effective treatment. Treatment should continue for one week.

Women can carry the infectious organisms for years before they are detected. Therefore, even a monogamous relationship doesn't totally eliminate risk.

Men who have more than one sex partner have a higher risk for contracting NGU. Although NGU can be treated and cured with the proper course of antibiotics, it is possible to become reinfected. Using a condom can reduce the risk. The partners of men who have an NGU infection should be examined and treated as well.

Untreated NGU can cause sterility in men and women.

Syphilis

Syphilis attacks about 90,000 Americans every year. It occurs most frequently in men and women between 20 and 29 years old. Approximately three times as many men as women are affected. Although more common in urban poor populations, syphilis is not restricted to this group.

Syphilis is caused by a bacterium that is capable of infecting almost any organ or tissue. The germ enters the body through very small lesions on the skin or mucous membranes.

Babies and Syphilis

As the rate of syphilis has increased, so has the rate of infants born with the disease. An infected mother almost always passes the disease to her fetus through the placenta.

Symptoms at birth may be minimal or absent. By six weeks of age, an infected baby shows signs of failure to thrive and may develop a characteristic "old man" look.

A copper-colored lesion often appears on the soles of the feet and the palms of the hands. Blistery lesions frequently appear around the nose, the mouth and the diaper area. The discharge from these lesions is contagious. These symptoms will disappear in time.

Some children born with syphilis never display symptoms; others develop ulcers in the nose and in the hard palate. The disease may attack the nervous system and result in mental retardation and blindness.

If the disease is diagnosed, both the mother and the baby can be treated with injections of penicillin. The outlook is good for the baby if serious damage has not already occurred. Syphilis can cause fetal death if not treated.

Symptoms

The first symptoms appear ten to ninety days after exposure, with an average onset of three to four weeks. Symptoms vary according to the stage of the disease. Syphilis has four stages:

- early or primary
- secondary
- latent
- late or tertiary

■ **Primary stage:** The primary stage is the stage of invasion. The main symptom is a lesion at the site of infection, most frequently on the penis, labia, cervix, anus or rectum. The lesion can occur on the lips, in the mouth, or on any other body part.

A sore, known as a *chancre*, starts as a red dot and develops into a pimple. Although the chancre is usually small and painless, it is teeming with the bacteria that cause the disease. The lymph nodes may swell slightly, but are not painful. The chancre heals and disappears without treatment in four to six weeks.

■ **Secondary stage:** The secondary stage begins from one week to six months after the chancre appears. A new wave of symptoms signals system-wide infection. These symptoms include a pale rash on the palms of the hands and the soles of the feet, fever, sore throat, headache, stiffness, loss of appetite and hair loss, including the eyelashes and eyebrows. Weeping, blister-like lesions appear on the moist skin surfaces, particularly the genitals and the anus. These lesions are highly infectious. This stage lasts from three to six months.

■ **Latency stage:** There are no apparent symptoms during the latency stage, and the person is not contagious. However, microorganisms are invading the body's tissues, including the brain, the heart and the bones. Approximately 50% to 75% of those with untreated syphilis remain in the latency stage for the rest of their lives.

- **Tertiary stage:** Symptoms during the tertiary, or late, stage of syphilis reflect serious tissue damage to the heart, the eyes, the brain and the nervous system. The tertiary stage is characterized by blindness, insanity, paralysis, skin tumors and death.

Treatment

Syphilis is easy to treat and cure. One shot of penicillin can stop the disease in the primary and the secondary stages. High doses of penicillin are administered over a long time period for tertiary syphilis. A complete cure is probable. However, people infected with HIV may have accelerated responses to syphilis and high rates of treatment failure. A blood test called VDRL is the most common test for infectious syphilis. Most states require this test for a marriage license. Penicillin can prevent *congenital syphilis.*

Prevention of Bacterial STD

The best way to prevent all STD, including bacterial STD, is abstinence from sexual intercourse. A mutually monogamous relationship with an uninfected partner also protects against STD infection. Limiting the number of sexual partners reduces the risk of contracting STD.

Barrier contraceptives (condoms or diaphragms) used with spermicides provide some protection, but they must be used consistently to be effective. Condoms used with spermicides are not 100% effective against STDs such as syphilis because infection sites may be located outside the area covered by the condom.

1-Minute Facts

- Most STD caused by bacteria can be treated with antibiotics. However, there are no vaccines to prevent these infections. Infection with an STD does not confer future immunity to that disease.

- Chlamydia has reached epidemic proportions in the United States.

- Gonorrhea is the most commonly reported infectious disease in the United States, even though experts believe that only 50% of all cases are reported and treated.

- Most cases of non-gonococcal urethritis are bacterial infections, principally chlamydia.

- Syphilis attacks about 90,000 Americans every year.

- Abstinence from sexual intercourse provides the best protection against STD.

- Condoms can help reduce the risk of getting bacterial STD.

Viral STD

Myth: Once someone is cured of an STD, he or she is cured forever.

Fact: Even with proper treatment, a person can be reinfected with most STDs. There is no limit to the number of times a person can get most STDs.

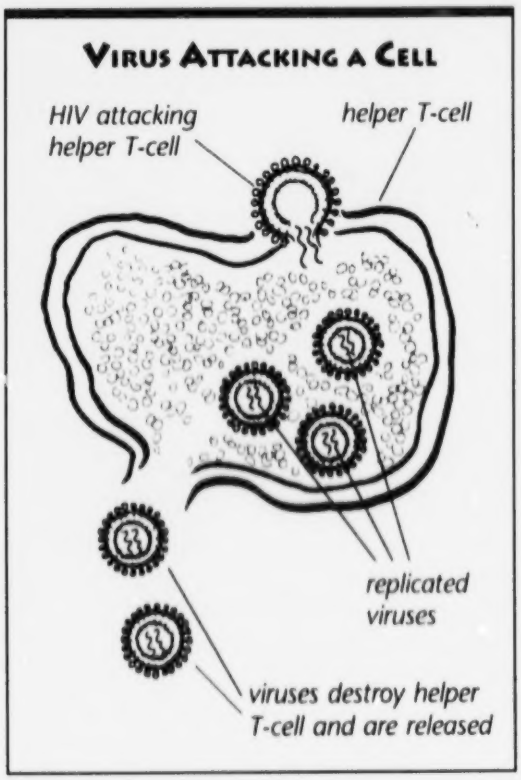
Viruses are the smallest known living things. If 2 million viruses were placed in a row, their combined length would be less than one-half inch. These *pathogens* can only be seen with a powerful electron microscope.

Viruses can only live in living cells called *host cells*. They use the host cells' food and energy.

Viruses cannot multiply by themselves. They need to use the reproductive structure of the host cell. Once they take over a cell, they can cause it to produce new viruses. Eventually the infected cell bursts open and releases hundreds of virus particles. These particles can then infect other cells.

Viral diseases are hard to treat because it is difficult to kill the virus without also killing the host cell. Therefore, antibiotics are not an effective treatment. Viruses can also *mutate*, or change, which limits the use of many medications.

Viral diseases are usually spread directly from person to person. People who contract STD caused by viruses usually have the disease for life.



Viruses such as HIV can only live and multiply inside a host cell.

STDs caused by viruses include:

- hepatitis
- herpes simplex
- HIV/AIDS
- human papilloma virus (genital warts)

Hepatitis

The word *hepatitis* literally means inflammation of the liver. Hepatitis can be caused by a variety of organisms and drugs and by exposure to toxic chemicals.

Viral hepatitis is the most common type of hepatitis. Viral hepatitis is generally one of three categories: type A, type B or type C (formerly called non-A, non-B). All of these types can be transmitted sexually or nonsexually. *Hepatitis B* is the most common sexually transmitted form.

- **Hepatitis A,** or **HAV**, lives in the intestinal tract and is acquired by fecal contamination. Sexual partners who engage in oral/anal activities can be infected by HAV.

- **Hepatitis B,** or **HBV**, is most often transmitted by infected blood and blood products. It can be transmitted sexually because the virus is present in body secretions such as saliva, semen and menstrual blood. Anyone who has multiple sexual partners increases his or her risk of contracting HBV.

  Approximately 5% to 10% of the people exposed to HBV will not become seriously ill, but they will remain active carriers capable of infecting others. The number of adult carriers is estimated to be between 400,000 and 800,000 in the United States and between 150 to 200 million worldwide.

  Pregnant women can pass HBV to their babies. Studies show that approximately 70% of the children born to HBV-positive mothers will be HBV positive by age six months.

- **Hepatitis C** is caused by several types of viruses. All are blood borne and are spread typically by blood transfusions. However, they can also be transmitted sexually.

Symptoms

The symptoms of HAV appear two to six weeks after exposure. Infected persons are most contagious during this period.

In HAV, the liver becomes tender and swollen, and *bilirubin*, a substance produced when the liver breaks down aged blood cells, accumulates in the bloodstream. Most people experience some or all of the following: jaundice, weakness, brownish urine, whitish bowel movements, lack of appetite, a low-grade fever for several days and low energy for several weeks.

The symptoms of type HBV and of type C are the same as those of HAV, but they usually begin six weeks to six months after infection. However, with these two types, symptoms last longer and are more severe. Approximately 10% of the people with HBV in the United States develop chronic liver disease; approximately 50% of those with type C develop chronic liver disease.

Treatment

There is no specific treatment for HAV. Most people completely recover without complications. People who have had HAV are immune to the disease.

Good hygiene and cautious behavior can substantially lower the risk of contracting HAV. There is no vaccine for HAV, but a shot of gamma globulin can reduce the risk of contracting it for up to six months. Gamma globulin can also prevent disease symptoms if administered immediately after exposure.

Treatment for HBV and type C consists mainly of bed rest, a healthy diet and restricted alcohol use. Hospitalization may be required if symptoms are severe. Recovery usually takes about four months.

Avoiding activities that allow contact with contaminated blood or other body secretions eliminates the risk of contracting HBV and hepatitis C. Practicing safer sex, limiting the number of sexual partners and not sharing needles will greatly reduce the risk. Blood donations are screened for HBV, but other activities that share blood should be avoided.

An HBV vaccine is available. Vaccination is recommended for all infants and adolescents.

Herpes Simplex

Herpes simplex affects approximately 30 million Americans; 500,000 new cases are reported every year. It is caused by two types of related viruses. Type I commonly causes cold sores around the mouth. Type II causes sores on or around the genitals. However, both viruses can infect either area.

Once a person is infected, the virus lives in the body for the rest of his or her life. It hides in the nerve endings where the immune system cannot find it. Periodically, the virus becomes active and the sores reappear. Recurrences can be triggered by fever, by other viral infections, by fatigue and stress, by menstruation and even by the sun and by the wind.

Both types of viruses are transmitted by direct contact with an active sore or virus-containing genital secretion. Pregnant women can infect their babies during childbirth. Some people may have and transmit the virus without any symptoms.

Symptoms

Herpes is chronic, but it is neither progressive nor fatal. The initial onset of symptoms occurs two to ten days after exposure and lasts two to three weeks.

Flu-like symptoms include muscle aches, swollen glands, fever and sometimes shooting pains in the legs and abdomen. Painful blisters or sores appear around the mouth or genitals. Symptoms will subside without treatment. The first outbreak of herpes is usually the most severe.

Treatment

There is no cure for herpes, and it does not respond to antibiotics. Some antiviral drugs, such as acyclovir, can help relieve the severity of the symptoms.

HIV/AIDS

HIV, or *human immunodeficiency virus*, is the virus that infects the cells of the immune system and leads to the illnesses associated with AIDS. Individuals can be infected with the virus for many years before they become ill. They can transmit it to others during this time. There is no cure for HIV and no vaccine to prevent it.

HIV infection is a blood-borne disease that is sexually transmitted. It can pass from one person to another during vaginal, anal and oral intercourse.

HIV infection can also spread by contaminated blood or contaminated blood products. Before 1985, transfusions and factor products used by hemophiliacs were major sources of the infection. Today, the U.S. blood supply is safe, because all blood is tested for virus antibodies before it is used. Organs donated for transplant and semen donated for artificial insemination are also screened for HIV.

Needles used for injecting drugs, for tattooing and for ear piercing can transmit HIV. It can also be passed by a pregnant woman to her baby in utero or by exposure to her blood during delivery. Contaminated breast milk can also spread HIV.

HIV is not spread through the air, water or food. It cannot penetrate skin. Therefore, it is safe to touch a person with HIV. It is also safe to share eating utensils, bathrooms and household articles with a person who has HIV. Mosquitoes, fleas and other biting insects do not transmit HIV. Donating blood is perfectly safe.

Symptoms

The symptoms of HIV infection are nonspecific. Lowered immunity leaves any part of the body vulnerable to "opportunistic" infections and to simple deterioration. Combinations of symptoms rather than any one symptom suggest HIV infection.

Treatment

There is no cure for HIV/AIDS, but a variety of treatments are helping infected people stay healthy longer. Patients are being treated with drugs designed to prevent some of the illnesses common in HIV infection.

The development of drugs that suppress the HIV infection itself rather than its complications has been a significant step in treating HIV. The most widely used antiviral drug is *AZT*. AZT helps decrease symptoms and prolong the life of patients with HIV.

An HIV vaccine may be available in the future. This vaccine may act directly on the virus or the cells it infects, or it may act indirectly by stimulating increased immune responses. However, an effective vaccine is years away.

Today, HIV prevention depends on effective precautions regarding sexual practices and needle use, screening blood products, pregnancy counseling, and infection control practices in public and private health care.

HIV: The Antibody Test

The HIV antibody test indicates if a person has been infected with HIV, the virus that causes AIDS. The test looks for HIV antibodies in the person's blood. If there are antibodies in the person's blood, he or she is infected with HIV.

Getting the test is simple. A counselor meets privately with the person to explain the procedure, to describe the known risk factors for infection and to answer questions. Then a health care worker takes a blood sample from a vein in the person's arm. The sample is sent to a laboratory, and the results are available in two weeks or less.

Human Papilloma Virus (Genital Warts)

Genital warts (sometimes called *condylomata acuminata*) are caused by the *human papilloma virus*, or HPV. HPV is the fourth most prevalent STD in the United States. An estimated 10% of the U.S. adult population is HPV infected, and 1 million new cases appear each year.

The condition is most frequent in younger people, ages 15 to 29. It occurs most often in people who engage in frequent sexual activity, especially with multiple partners. Statistics reveal that 12% to 34% of patients with genital warts also suffer with other types of sexually transmitted disease.

HPV is a different type of virus than the virus that causes warts on the hands and the feet. It can be transmitted during any kind of sexual contact. However, there is new evidence that other routes of infection are also possible.

HPV causes a condition that has been linked to cancer of the cervix. Women with HPV are estimated to have a 1,200 to 2,000 times greater risk of cervical cancer than women who have never been infected by the virus.

Symptoms

The warts, which typically grow around the genitals, anus and urinary passageways, cause itching, burning, tenderness and bleeding in the affected areas. Warts in women are common on the inside of the vagina and the cervix. On the outer genitals, the warts are often firm and are dark pink or red. They may be as tiny as a pencil tip. They may also appear in clusters and look like tiny cauliflowers.

"Flat warts," which are not visible to the naked eye, usually occur on the cervix or the penis. They can be seen only with a special microscope after they have been exposed to vinegar, which whitens the infected cells.

Some people may not know they are infected because they have no symptoms.

Treatment

The type of treatment depends on several factors. Since HPV has been linked to the development of genital cancers, women usually have a *Pap smear* before any treatment is begun. The results are used to guide the physician's recommendations. Treatment plans also consider the number of warts, their location, the patient's pregnancy status and the failure of any already tried treatments.

The most widely used treatment is a caustic solution that is applied directly to the warts. Several applications may be necessary to destroy all the warts. Alternative treatments include cryotherapy (freezing the warts with liquid nitrogen or solid carbon dioxide), burning them with electrosurgery or removing the warts surgically.

Sexually Transmitted Viruses and Cancer

Several viruses are known, or strongly suspected, to cause human cancer. Cancer-causing viruses can be sexually transmitted. High levels of antibodies to herpes simplex II, a very common STD, have been found consistently in women with cervical cancer. Two other viruses known to be transmitted sexually, *cytomegalovirus* and *papillomavirus*, can also damage healthy cells. People with hepatitis B, which is spread both by sexual activity and by contaminated blood, have higher rates of liver cancer than noninfected individuals.

Decreasing the Risk of Cervical Cancer

Barrier contraceptives (condoms and diaphragms) used with spermicides (creams, foams and jellies) can reduce the risk of cervical cancer.

Cancer of the cervix has been linked to the sexually transmitted human papilloma virus, or HPV. The following behaviors are found in women who are at greater risk for developing this form of cancer:

- intercourse at an early age
- frequent sexual partners before age 20
- frequent douching
- smoking

Prevention of Viral STD

As with bacterial STD, the best way to prevent viral STD is abstinence from sexual intercourse. A mutually monogamous sexual relationship with an uninfected partner protects against STD infection. Limiting the number of sexual partners also reduces the risk of contracting STD.

Barrier contraceptives used with spermicides provide some protection, but they must be used consistently to be effective. Condoms used with spermicides are of limited effectiveness against herpes simplex and genital warts because infection sites may be located outside the area covered by the condom.

Avoiding activities that share blood or other body fluids is important in preventing the transmission of hepatitis and HIV. In addition to sexual intercourse, activities to avoid include:

- sharing needles used for injecting drugs or for tattooing or ear piercing
- blood-brother and blood-sister activities

1-Minute Facts

- People who contract STD caused by viruses usually have the disease for life.
- Viral hepatitis is the most common type of hepatitis. It can be transmitted either sexually or nonsexually.
- Herpes simplex affects approximately 30 million Americans. There are two types of herpes virus; one commonly affects the mouth and one commonly affects the genitals. However, both viruses can infect either area.
- HIV is the virus that infects the cells of the immune system and leads to the illnesses associated with AIDS. This blood-borne disease is sexually transmitted.
- Human papilloma virus, or genital warts, is the fourth most prevalent STD in the United States.
- Several viruses are known, or strongly suspected, to cause cancer.
- Abstinence from sexual intercourse provides the best protection against STD.
- Condoms can help reduce the risk of getting viral STD.

OTHER STDs

MYTH: People who are healthy do not have any disease-causing organisms in their bodies.

Fact: All healthy human beings have a variety of organisms that are naturally associated with certain parts of the human body. The body's immune system usually prevents these organisms from causing disease. However, they can cause disease when the immune system is compromised or when they are transported to other body parts.

Some STDs are caused by fungi and protozoa. Protozoa are tiny, single-celled organisms that live in water, soil, plants and animals. Fungi form a diverse group of living organisms that are neither plant nor animal.

Most fungi are very useful, not harmful. Only a few of the 100,000 known species of fungi cause human diseases. Fungal diseases can be hard to control and take time to treat, but they are rarely life threatening. Treatment usually consists of medications that prevent fungal spores from developing.

Protozoa can live as free organisms or as parasites, feeding on or in another animal. Only a few of the more than 20,000 different types of protozoa cause disease. However, many of the diseases caused by protozoans are serious. Treatment usually requires potent medicines that may have unpleasant side-effects.

STDs caused by fungi and protozoa include:

- candidiasis
- trichomoniasis

Candidiasis

Candidiasis, often referred to as thrush or yeast infection, is the most common fungal infection in human beings. *Candida albicans* normally lives on the body's skin surfaces and does not cause illness. However, when it invades the membranes of the mouth or the vagina, it causes a mild infection. The fungus can enter the bloodstream and cause a serious, and sometimes fatal, generalized infection in people whose resistance is low.

Not all candida infections are sexually transmitted. One of two conditions usually causes candidiasis. A person's natural resistance may be low because of another illness, or treatment with antibodies may upset the natural balance of microbes in the mouth or the vagina and allow the fungus to grow out of control. Hormonal changes caused by pregnancy or by use of oral contraceptives can also contribute to candidiasis.

The infection can be passed to a sexual partner. Yeast infections are not dangerous in themselves, but they can mask the symptoms of gonorrhea and syphilis.

Symptoms

Oral thrush is characterized by sore, creamy-yellow raised patches in the mouth and in the throat. The patches can be rubbed off easily by eating and by brushing the teeth. They leave behind a painful raw area.

Women with vaginal yeast infections experience itching and irritation of the vagina and swelling and redness of the vulva. They may have a thick, white discharge and pain or soreness during sexual intercourse. Men rarely have symptoms, but they may have a slight discharge.

Treatment

Treatment for candidiasis depends on its location and its severity. Over-the-counter remedies, such as vaginal suppositories or creams, may be effective for oral thrush and vaginal yeast infections. However, if symptoms persist for more than two weeks, an antifungal medication will probably be prescribed. Sexual partners should also be treated.

Trichomoniasis

Trichomoniasis, or *trich*, is a vaginal infection caused by a one-celled organism, *Trichomonas*. The organism is commonly present in the body in small numbers. It can cause infection if it mulitplies rapidly or is transmitted by sexual contact. Sexual intercourse is the most common way trichomoniasis is transmitted, but it can be passed on by wet towels, by washcloths and by underwear. Trichomonas can also cause urinary tract infections.

Symptoms

Symptoms in women include a frothy, thin, greenish-white or yellowish-brown discharge that smells bad and causes the vagina and vulva to itch. Men rarely have symptoms, but they may have a slight discharge.

Treatment

Prescription drugs are the most effective treatment. All sexual partners should be treated to prevent reinfection.

Prevention of Other STDs

Although sexual intercourse can transmit candidiasis, it is not its only source. Maintaining good health is the best prevention for this disease. Women should avoid using feminine hygiene products such as commercial douches, should wear cotton underwear and should never engage in vaginal sex after anal sex activities. They should also wipe from front to back when cleaning the genital area to avoid fecal contamination.

Abstinence can prevent sexual transmission of both candidiasis and trichomoniasis. Condoms can reduce the risk of transmitting these STDs.

1-Minute Facts

- STDs caused by fungi or protozoa can be hard to control and treat, but they are rarely life threatening.
- Candidiasis, often referred to as thrush or yeast infection, is the most common fungal infection in human beings.
- Trichomonas infections can be transmitted by wet towels, by washcloths or by underwear. However, trichomoniasis is most commonly transmitted by sexual intercourse.
- Abstinence can prevent sexual transmission of candidiasis and trichomoniasis. However, candidiasis has other causes.
- Condoms can help reduce the risk of getting other STDs.

Prevention and Control

Myth: It is not necessary to practice safer sex.

Fact: Everyone who is sexually active needs to act in ways that promote safety from sexually transmitted disease, or STD.

STD prevention is directly related to personal behavior. People are primarily responsible for their own health. To prevent the spread of STD, they must behave in ways that reduce their risk of exposure and their risk of transmitting STD. Couples should practice safer sex, using condoms and spermicides, unless both have tested negative for every STD and have sex only with each other.

Choices About Sex

Many individual choices help reduce or eliminate the risk of STD infection. All are related to sexual behavior. Some choices are more effective in preventing the spread of STD than others. Sexual choices include:

- abstinence
- monogamy
- condom use
- safer sex

■ **Abstinence:** Abstinence means avoiding all sexual intercourse: vaginal, oral and anal. Abstinence clearly reduces the risk of getting a sexually transmitted disease. However, some STD can spread by nonsexual means, so even abstinence doesn't offer 100% protection. But it is the safest, most effective way to maintain good sexual health.

■ **Monogamy:** The risk of STD rises as the number of sexual partners increases. If two people who do not have STD have sex only with each other, their risk of STD is extremely low. This description applies to long-term monogamous relationships, typically represented by marriage.

The practice of *serial monogamy*, faithfulness to a single partner for short periods of time, carries higher risk of STD exposure. Every time two people have sex, they risk direct exposure from each other and indirect exposure from everyone their partner has ever had sex with.

■ **Condom use:** Besides abstinence and mutual monogamy, latex condoms used with spermicides containing nonoxynol-9 are the best protection against STD. Condoms are easy to use, but they are not foolproof. They must be used consistently and correctly to be effective.

Condoms work by providing a barrier that prevents the direct contact of mucous membranes with the infecting organism and body fluids. Latex condoms, rather than

"natural-membrane" condoms, should be used. Natural-membrane condoms have large pores, which are less effective in blocking pathogens, especially viruses.

Condoms can be purchased without a prescription. They are available in drug stores, convenience stores, family planning clinics and grocery stores. They should be stored in a cool, dry place, because heat and sunlight weaken latex.

Condom Sense

- Latex condoms offer greater protection against STD, including HIV, than natural-membrane condoms.
- Condoms should be stored in a cool, dry place, out of direct sunlight.
- Condoms in damaged packages or those that show signs of age (brittleness, stickiness or discoloration) should be discarded.
- Condoms should be handled carefully to prevent puncture.
- Condoms should be put on before any genital contact. To put on a condom properly, hold its tip and unroll it onto the erect penis. Leave space at the tip to collect semen and be sure no air is trapped in the tip.
- Only water-based lubricants should be used with condoms. Oil-based lubricants, such as petroleum jelly and baby oil, weaken latex.
- If a condom breaks, it should be replaced immediately. If ejaculation occurs after a condom has broken, a spermicide should be used immediately.
- After ejaculation, the rim of the condom should be held while the penis is withdrawn. The penis should be withdrawn while still erect.
- Condoms should never be reused.

Men should put a condom on as soon as the penis becomes erect. They should leave about a half inch of air space at the tip of the condom so it won't break during ejaculation. After ejaculation, the rim of the condom should be held in place as the penis is withdrawn. The penis should be withdrawn while still erect.

If more lubrication is desired, a water-based preparation should be used. Petroleum jelly, baby oil, cold cream and other oil-based lubricants weaken condoms and cause them to break.

- **Safer sex:** Safer sex refers to a set of guidelines that decrease the risk of getting HIV and other STD. Following the guidelines does not mean giving up sex, but it may mean giving up certain sexual activities.

Safer Sex Guidelines

- HIV, the virus that causes AIDS, is spread by the exchange of body fluids, such as semen, blood (including menstrual blood) and vaginal secretions, between sexual partners. Sexual partners should never allow any of their partner's body fluids to enter their bodies through the vagina, penis, anus, mouth, or any cut or open sore.
- Latex condoms help prevent HIV and other STD from passing between sexual partners. Both men and women should carry condoms and insist they be used.
- Condoms should be used with a birth control foam, cream or jelly that contains the spermicide nonoxynol-9. Lubricants with nonoxynol-9 are also available.
- Alcohol and other drugs can cloud judgment and make it harder to follow safer-sex guidelines. People should avoid having sex while under the influence of drugs.

- People are safer if they limit their number of sexual partners. But safer-sex guidelines should be followed even by people who have only one sexual partner.

What Is Safer Sex?

- Vaginal sex using a latex condom and a nonoxynol-9 spermicide is safer sex.
- Anal sex using a latex condom and a nonoxynol-9 lubricant is safer sex. Anal sex is not as safe as vaginal sex, because there is more chance the condom might slip or break. It also carries a greater risk of tissue damage that would allow disease-causing organisms to enter the body.
- Oral sex is safer sex only if no body fluids are exchanged. Latex condoms for men or a thin "rubber dam," often called a "dental dam," for women can be used to cover the genitals for safer oral sex.
- Mutual masturbation is safer sex as long as no body fluids are exchanged. Partners can masturbate each other or themselves. A man must be careful not to ejaculate near any body opening or break in the skin of his partner.
- Hugging, cuddling, caressing, holding, kissing, massage and body-to-body rubbing are all safer sex as long as body fluids aren't exchanged.

What Isn't Safe?

- Any activity in which body fluids are exchanged is not safe.
- Anal sex without a latex condom and a nonoxynol-9 lubricant is not safe.
- Vaginal sex without a latex condom is not safe.
- Oral sex with ejaculation in the mouth is not safe.
- Sharing sex toys is not safe if body fluids are exchanged.

Personal Protective Measures

Personal measures can assist in protecting against STD infection. Abstinence provides protection against all sexual transmission of STD. Mutual monogamy with an uninfected partner also provides protection. Other personal protective measures can assist in early detection of STD, and most STD can be treated if discovered early. In addition to abstinence and monogamy, protective measures include the following:

- **Being informed.** Everyone should be informed about STDs and their symptoms.

- **Determining a sexual policy**. People need to know what they want and what they don't want in a sexual relationship. People who are sexually active should set limits and communicate their policies to potential partners before engaging in any sexual activity.

- **Choosing sexual partners carefully**. Couples should talk about their past sexual experiences and sexual disease history and develop a trusting, caring relationship before becoming sexually involved.

- **Getting tested.** Everyone should be tested before becoming sexually involved. Tests can detect infections that don't show symptoms. This process can help develop intimacy as well as increase safety.

- **Being observant.** Sexually active people should be observant. They should check themselves and their partners to be sure that there is no genital discharge, rash, blisters or other sign of infection.

- **Washing the genitals after intercourse.** Pathogens don't like soap and water. Washing the genitals after intercourse helps wash away the organisms that cause STD. Prompt and thorough washing is strongly advised. Women who use spermicides and a diaphragm should not douche for six to eight hours after intercourse; however, washing the vulva is recommended.

  A man should wash his penis before sexual contact. Soap and water will remove organisms such as fungi that could cause an infection in his partner.

- **Urinating after intercourse.** Urinating after intercourse is beneficial because it washes out organisms from the urethra. It is especially helpful in men.

- **Using spermicides.** Spermicidal foams, creams and jellies offer protection against many STDs. Even using spermicides without a condom lowers risk. Using products containing nonoxynol-9 is best.

- **Avoiding drugs.** Alcohol and other drugs can interfere with good judgment and make it harder to practice safer sex.

- **Avoiding sex for money or drugs.** People who exchange sex for money or drugs have many sexual partners. Sexual contact under these circumstances is very risky.

People who have been exposed to STD must tell their sexual partners so they can be alert for symptoms. Both partners should be tested and treated, if necessary.

Prompt treatment can prevent serious complications. Hospitals, clinics, public health centers and private physicians can provide treatment. Treatment is usually quick, safe and very effective. Both partners should be treated to eliminate reinfection.

Fear, Denial and Rationalization

The HIV/AIDS epidemic has focused attention on STD in an unprecedented way. People are now better informed about STD, but the increased concern has led to a climate of fear. The fear that governs people's reaction to HIV has become a general response to all STD.

People who have symptoms that might indicate the presence of STD often experience a combination of fear and disbelief that leads to their delaying treatment. Their denial can be reinforced if symptoms disappear, as they do in many STDs. However, even without symptoms, people can continue to harbor infections inside their bodies and expose their sexual partners to the hidden disease.

Genital Self-Exams

The American Academy of Family Physicians, the American College of General Practitioners in Osteopathic Medicine and Surgery, the American Academy of Dermatology and the American Social Health Association in cooperation with the Burroughs Welcome Corporation have launched a new national education campaign that features the genital self-examination, or GSE.

They have produced a booklet that teaches people how to check for the signs of chlamydia, genital herpes, gonorrhea, genital warts and syphilis at an early stage of infection. The booklet also instructs people to seek medical help for diagnosis and treatment to avoid the serious complications that can arise when these diseases go untreated. Instructions for both men and women are included.

To get a copy of *The Genital Self-Examination Guide*, call 1-800-234-1124 or write to GSE, P.O. Box 4088, Woburn, MA 01888-4088.

The pattern of fear and denial is common. In one study of college students who visited their school's health center to be tested for STD, only one-fifth had made their appointments within three days of their symptoms' onset. More than half had waited at least two weeks before getting medical attention (Masters, Johnson and Kolodny, 1992).

People also use rationalization to delay getting help. Rationalization is the process of generating excuses to explain one's behavior rather than accepting the actual reason for it. "I didn't have time" and "My lover told me it was nothing to worry about" are typical examples of rationalization.

Some people don't get treated for STD because they are worried about what the doctor will think. Physicians and other health care providers are interested in patients' medical conditions, not their moral codes. The first goal is treatment.

Some people worry about confidentiality issues. Confidentiality concerns should be discussed with a health-care provider in advance. All health care providers are legally bound to keep information they learn about their patients confidential.

However, there are circumstances in which patient records are accessible. A court can subpoena medical charts. Patients consent to having their records examined by an insurance company every time they file a claim, and physicians must report cases of certain STDs to state public health departments.

Disease Control Measures

The national effort to fight STD is coordinated by the Centers for Disease Control and Prevention (CDC). The CDC's Division of STD/HIV Prevention in the National Center for Prevention Services provides:

- financial and technical assistance to state and local agencies to support STD and HIV screening and partner notification
- disease surveillance
- risk reduction education
- research
- training
- program evaluation

The CDC's STD and HIV programs are different in their approaches to disease prevention. The STD program focuses on controlling the spread of STD through screening, treatment and partner notification.

Since this approach does not aim to prevent the behaviors that put a person at risk, this is a secondary prevention program. The emphasis on secondary prevention reflects the historical focus on bacterial diseases that can be cured by antibiotics, not today's incurable viral diseases.

The CDC's HIV program offers a more useful approach. It focuses on primary prevention and also provides secondary prevention services, such as testing and partner notification. Newer efforts are designed to prevent infection by reducing or eliminating high-risk behaviors and changing community attitudes about those behaviors.

The HIV program invites community-based organizations, such as health centers, youth groups, churches and drug treatment programs, to carry out prevention activities. This broad approach means more people will get the primary prevention message.

National Disease Control Efforts

The Alan Guttmacher Institute recommends the following ways to redefine priorities to meet the nation's current STD challenge.

- **Change the disease focus:** Most of the federal resources are targeted for syphilis and gonorrhea, which combined comprise only about 10% of all STD cases. Chlamydia is four times more common than gonorrhea and ninety times more common than syphilis. Therefore, chlamydia requires increased control efforts, including routine screening and aggressive treatment.

  As the most prevalent and one of the most damaging of all curable STDs, chlamydia warrants high priority. In *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*, the U.S. Public Health Service recommends increased attention to this infection.

Improving Prevention Efforts

A national program of STD and HIV prevention should include the following elements.

- Strategies must be based on current information about sexual practices. Studies must be funded and political opposition to sexuality surveys defused.
- Statistics on the incidence of all STD, including chlamydia, must be improved. These statistics should be communicated to state and local agencies for action.
- State and local agencies must increase their efforts in STD and HIV primary prevention and treatment programs. Local communities should not rely on the federal government alone to provide the resources for control and elimination of STD.

- **Primary prevention:** Federal, state and local programs should provide education designed to increase public awareness of STD, including the potential for transmission, health consequences and ways to minimize risk. The primary prevention message, which can be tailored to specific populations and delivered in a wide variety of settings, should try to persuade people to change the behaviors that increase the risk of STD exposure. It should instruct people in using condoms consistently and correctly to reduce their risk of infection.

- **Partner notification:** Partner notification has always been a part of the STD program and has received a sizable portion of the budget for STD activities. Still, many STD clinics cannot meet the demand for on-site services. Furthermore, chlamydia and gonorrhea, the most prevalent STDs today, have relatively short incubation periods, which make partner tracing ineffective. It may be more effective to channel funding to education or to ask hospitals, clinics and laboratories to provide partner notification services directly.

- **Access to STD services:** Studies show that STD clinics serve mainly men. Even though women and teenagers are most affected by STD, men are more likely to have overt infection symptoms and to seek treatment. STD services must be broadened to reach more of the people in need. For example, screening and treatment services can be provided in family planning centers, adolescent clinics and other health care settings that are likely to serve women and teenagers.

- **Targeting teenagers:** All youth-serving agencies, from the federal to the local level, including the CDC, should expand both primary and secondary prevention efforts to teenagers for the following reasons:
  - Teens account for one-fourth of all STD every year.
  - The long-term impact of STD is greater for young people.
  - Only one-third of sexually active teenage women are currently screened for STD.
  - Teenage men are rarely screened for STD.

- **Funding:** Given the dimensions of the current STD problem, Congress will have to increase funding substantially and allocate support more fairly. Funds could most effectively be used for early detection and treatment and boosting primary prevention interventions.

Because STD can be incurable and sometimes deadly, prevention must be the primary message. Education must be aimed at helping people change unsafe behaviors, such as sex without condoms, multiple sexual partners and sharing needles, that put them at risk for acquiring STD. Prevention efforts must also look at today's STD epidemic as a medical crisis.

Key Factors for Sexuality Education

Research shows that school-based sexuality education for teenagers can positively affect knowledge, attitudes and behavior when it:

- Provides sexuality instruction within a comprehensive health education program that includes teacher training and integrated materials, implementation across grades and a foundation of basic health knowledge.
- Points out that teenage sex can be pleasurable, responsible and caring, and that it is not always harmful, sinful or destructive.
- Encourages teenagers to make healthy decisions for themselves.
- Gives straight facts about the health risks of sexual activity.
- Covers intimacy, interpersonal relationships, sexual decision making, sexual orientation and coercive sex.
- Supports those who have chosen abstinence.
- Strengthens communication between parents and children.
- Invites participation by parents and community leaders.
- Offers quality counseling and medical services for teenagers.
- Emphasizes male responsibility for condom use to prevent pregnancy and the spread of STD.
- Teaches essential skills for sexual communication and negotiation.

1-Minute Facts

- Individual choices about sexual behavior can help reduce or eliminate the risk of STD infection.
- Abstinence is the safest, most effective way to maintain good sexual health.
- Long-term monogamous relationships reduce the risk of exposure to STD.
- Latex condoms used with spermicides can provide protection against STD.
- Safer sex guidelines decrease the risk of acquiring HIV and other STD.
- Other personal measures assist in protecting against STD infection.
- Fear, denial and rationalization can lead to delays in getting treatment for STD infection.
- The national effort to fight STD is coordinated by the Centers for Disease Control and Prevention.
- Education about STD should emphasize prevention and help people change unsafe behaviors.

Glossary

A

AIDS (Acquired Immune Deficiency Syndrome)—a viral disease that damages the body's immune system, making the infected person susceptible to a wide range of serious diseases.

antibiotic—A drug derived from molds and fungi, which is used mainly to treat bacterial infection.

B

bacteria—One-cell microscopic organisms found in living things, air, soil and water. Some are beneficial to humans, but some cause disease.

B-cell—A lymphocyte that develops in the bone marrow and protects against disease and infection.

C

carcinogenic—Capable of causing cancer.

carcinoma—A malignant cancer of the tissue surfaces such as skin, linings of the internal organs, and glands. It is the most common type of cancer.

chancre—A painless sore that appears at the site of infection in the primary stage of syphilis.

co-infection—Having more than one infection at the same time.

contagious—Refers to the time period when an infected person is able to pass an infectious disease to another person by direct or indirect contact.

E

epidemic—A disease that exceeds the expected number of cases of the disease.

H

health promotion—Activities geared toward enhancing the quality of life and preventing disease and disability.

HIV (human immunodeficiency virus)—The virus that causes AIDS.

I

immunity—The state of being able to resist a disease by counteracting the potential effects of a foreign substance or pathogen.

immunoglobulin—A protein substance in the blood serum.

incubation—The time span between exposure to a disease organism and the onset of symptoms.

infectious—Refers to a disease spread by pathogens.

intercourse—A type of sexual contact involving one of the following: (1) insertion of a man's penis into a woman's vagina (vaginal intercourse); (2) placement of the mouth on the genitals of another person (oral intercourse) or (3) insertion of a man's penis into the anus of another person (anal intercourse).

inflammation—A response of the body to infection or injury characterized by redness, swelling, fever and pain.

L

lymphocytes—White blood cells circulating in lymph fluid, which perform basic surveillance functions against disease.

M

mutate—To change in normal structure or function.

P

pathogen—A microorganism that can cause disease, e.g., bacterium, virus, fungus.

phagocyte—A cell that can ingest and destroy foreign materials within the body.

R

risk—The likelihood of injury, damage or another negative consequence following an action.

S

safer sex—Sexual activity that protects from STD infection because no body fluids are exchanged.

STD (sexually transmitted disease)—Any of a number of diseases that can spread through sexual contact.

systemic—Affecting the entire organism or bodily system.

T

toxin—A poisonous compound that causes disease.
tumor—An accumulation of abnormal, or cancerous, cells.

V

vaccine—A preparation containing killed or weakened viruses or bacteria. It is administered to give a person immunity to a specific disease organism or toxin.

Resources

AIDS Action Council
1875 Connecticut Ave., Suite 700
Washington, DC 20009
202-986-1300

American Alliance for Health, Physical Education, Recreation and Dance
1900 Association Dr.
Reston, VA 22091
703-476-3400

American Association of Sex Educators, Counselors and Therapists
435 N. Michigan Ave., Suite 1717
Chicago, IL 60611
312-644-0828

American Cancer Society National Office
1599 Clifton Rd. NE
Atlanta, GA 30329
800-255-2352
Response system: 800-ACS-2345

American Foundation for AIDS Research
5900 Wilshire Blvd., 23rd Floor
Los Angeles, CA 90036
213-857-5900

American Medical Association
Department of Health Education
515 N. State St.
Chicago, IL 60610
312-464-5000
Customer service: 800-621-8335

American Pharmaceutical Association
2215 Constitution Ave. NW
Washington, DC 20037
202-628-4410

American Public Health Association
1015 15th St. NW
Washington, DC 20005
202-789-5600

American Red Cross
HIV/AIDS Education Office
1750 K St. NW, 7th Floor
Washington, DC 20006
202-662-1577, 202-973-6000;
or contact local Red Cross

American School Health
Association
P.O. Box 708
Kent, OH 44240
216-678-1601

Cancer Information Service
Office of Cancer Communications
National Cancer Institute
Building 31, Room 10A24
9000 Rockville Pike
Bethesda, MD 20892
800-4-CANCER

Centers for Disease Control and
Prevention (CDC)
1600 Clinton Rd. NE
Atlanta, GA 30333
404-639-3311

Clearinghouse on Health Indexes
Division of Analysis
Office of Analysis and
Epidemiology
National Center for Health
Statistics
Centers for Disease Control and
Prevention
6525 Belcrest Rd., Room 790
Hyattsville, MD 20782
301-436-7035

March of Dimes, Birth Defects
Foundation
Public Health Education
Department
1275 Mamaroneck Ave.
White Plains, NY 10605
914-428-7100

National AIDS Information
Clearinghouse
P.O. Box 6003
Rockville, MD 20849
800-458-5231

National Clearinghouse for
Maternal and Child Health
8201 Greensboro Dr., Suite 600
McLean, VA 22102
703-821-8955

National Health Information
Center
Office of Disease Prevention and
Health Promotion
P.O. Box 1133
Washington, DC 20013
800-336-4797

National Information Center for
Orphan Drugs and Rare
Diseases
P.O. Box 1133
Washington, DC 20013
800-456-3505

National Kidney and Urologic
Diseases Information
Clearinghouse
Box NKUDIC
9000 Rockville Pike
Bethesda, MD 20892
301-468-6345

Sex Information and Education
Council of the United States
(SIECUS)
130 West 42nd St., Suite 2500
New York, NY 10036
212-819-9770

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Index

abstinence, *xi*, 4, 18, 30, 36, 38
adolescents
  sexuality education for, 50
  STD risk factors, 3
  STD services, 48, 49
age factors, 4
AIDS (acquired immune deficiency syndrome), 1, 26–27, 53
Alan Guttmacher Institute, 47–49
alcohol use, 43
anal intercourse, 1, 10, 41, 55
antibiotics, 9, 10, 22, 53
AZT, 27

bacteria, 9–19, 53
barrier contraceptives, 18, 30
B-cell, 53
behavior, *xi*, 4–5
biological factors, 3–4

cancer, 29–30
candidiasis, 34–35
carcinogenic, 54
carcinoma, 54
CDC (Centers for Disease Control and Prevention), 46
cervical cancer, 7, 28, 30
chancre, 17, 54
chlamydia, 1, 3, 10–12, 15, 47
  in newborns, 8
co-infection, 4, 54
condoms, *xi*, 4–5, 18, 30, 36, 38–40
confidentiality, 45
contagious period, 54

death, 7, 16, 18
denial, 44–45
diaphragms, 18, 30, 43
disease control, 46–50
douching, 43
drug use, 5, 43

ectopic pregnancies, 6, 7
education, 48, 49, 50
epidemic, 54

fears, 44–45

gender factors, 3, 48
genital self-examination (GSE), 44
genital warts, 1, 7, 12, 28–29, 30
gonorrhea, *x*, 1, 2, 3, 8, 12, 13–14, 34

health promotion and education, *xi*, 48, 49, 50, 54
hepatitis, 1, 23–24
herpes, 1, 8
herpes simplex, 25, 30
HIV antibody test, 27
HIV (human immunodeficiency virus), 54
HIV infection, 1, 26–27
  pregnancy and, 8
  prevention measures, 46
  syphilis and, 18
  in women, 7
HPV (human papilloma virus), 7, 28–29
hysterectomies, 6

immunity, 54
immunoglobulin, 54
incubation period, 54
individual protective measures, 42–43
infectious, 54
infertility, 6, 7
inflammatory response, 55
intercourse, 55

lymphocytes, 55

masturbation, 41
men, untreated STD in, 7
monogamy, *xi*, 4, 18, 30, 38
mutate, 22, 55

national control efforts, 47–49
newborns
  chlamydia and, 12
  gonorrhea and, 14
  herpes simplex and, 25
  STD and, 5, 8
  syphilis and, 16

NGU (non-gonococcal urethritis), 10, 15
nonoxynol-9, 38, 40, 43
number of sexual partners, 4

oral/genital intercourse, 1, 10, 41, 55

partners, number of, 4
pathogens, 21, 55
penile/vaginal intercourse, 1, 10, 41, 55
phagocytes, 55
PID (pelvic inflammatory disease), 6, 10
  chlamydia and, 12
  gonorrhea and, 14
pregnancy, 5, 8
prevention, *xi*, 37–51
protective measures, 42–43

rationalizations, 45
resistance, lowered, 4
risk, 55
risk factors, 3–5

safer sex, 37, 40–41, 55
serial monogamy, 38
spermicides, 5, 18, 30, 43
STD (sexually transmitted disease), 55
  bacterial, 9–19
  fungal and protozoan, 33–36
  historical perspective, *ix–xi*
  incidence, 2
  prevention and control, 37–51
  risk factors, 3–5
  viral, 21–31
syphilis, *x*, 1, 2, 16–18, 34
systemic, 55

thrush. *See* candidiasis
toxins, 10, 56
trichomoniasis, 35
tumor, 56

urethritis. *See* NGU (non-gonococcal urethritis)

vaccines, 10, 56
  hepatitis, 24
  HIV, 27
vaginal/penile intercourse, 1, 10, 41, 55
VD (venereal disease). *See* STD
VDRL blood test, 18
viruses, 21

women
  cervical infections, 4
  STDs and, 5–8

yeast infection. *See* candidiasis

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